

IN THE CLAIMS:

1 1. (CANCELLED)

1 2. (CURRENTLY AMENDED) The method of Claim 7-4-wherein the step of deciding
2 comprises the step of, if the router does not receive a response at all within a predeter-
3 mined time, deciding that the peer router does not support the new TTL mode of opera-
4 tion.

1 3. (CANCELLED)

1 4. (CURRENTLY AMENDED) The method of Claim 7-4-wherein the new TTL mode of
2 operation is defined by BGP TTL Security Hack (BTSH).

1 5. (PREVIOUSLY PRESENTED) The method of Claim 4 wherein the first predeter-
2 mined value of the TTL parameter is 255.

1 6. (CURRENTLY AMENDED) The method of Claim 7-4-wherein the second predeter-
2 mined value of the TTL parameter is 1.

1 7. (CURRENTLY AMENDED) ~~The method of Claim 1 further comprising the steps of,~~
2 ~~in response to the router receiving a negative acknowledgement of the initial BGP mes-~~
3 ~~sage from the peer router:~~

4 A method for allowing a router to efficiently determine a time-to-live (TTL) configura-
5 tion of a peer router in a computer network, the method comprising the steps of:

6 automatically determining which TTL mode of operation the peer router supports
7 by sending an initial Border Gateway Protocol (BGP) message from the router to the peer
8 router, the initial BGP message including a first predetermined value of a TTL parameter;
9 if the router receives a positive acknowledgement of the initial BGP message
10 from the peer router, determining that the peer router supports exchanges of messages
11 using a new TTL mode of operation; and
12 if the router receives a negative acknowledgement of the initial BGP message
13 from the peer router, deciding that the peer router does not support the new TTL mode of
14 operation, and switching to an old TTL mode of operation by resending the initial BGP
15 message with a second predetermined value of the TTL parameter, and subsequently,
16 upgrading the peer router to the new TTL mode of operation₁₋₅
17 rebooting the peer router, thereby destroying an existing session
18 between the routers₁₋₅
19 establishing a new session by sending messages with the first pre-
20 determined value of the TTL parameter₁₋₅and
21 communicating between the routers using messages with the first
22 predetermined value of the TTL parameter.

1 8-12. (CANCELLED)

1 13. (CURRENTLY AMENDED) The apparatus of Claim 15-12-wherein the means for
2 deciding comprises:
3 means for deciding that the peer router does not support the new TTL mode of
4 operation, if the router does not receive a response at all within a predetermined time.

1 14. (CURRENTLY AMENDED) The apparatus of Claim 15-12-wherein the new TTL
2 mode of operation is defined by BGP TTL Security Hack (BTSH).

1 15. (CURRENTLY AMENDED) The apparatus of Claim 12 further comprising:
2 Apparatus adapted to allow a router to efficiently determine a time-to-live (TTL) configu-
3 ration of a peer router in a computer network, the apparatus comprising:
4 means for sending an initial Border Gateway Protocol (BGP) message from the
5 router to the peer router, the initial BGP message including a first predetermined value of
6 a TTL parameter;
7 means for determining that the peer router supports exchanges of messages using
8 a new TTL mode of operation, if the router receives a positive acknowledgement of the
9 initial BGP message from the peer router;
10 means for deciding that the peer router does not support the new TTL mode of
11 operation, if the router receives a negative acknowledgement of the initial BGP message
12 from the peer router, and for switching to an old TTL mode of operation by resending the
13 initial BGP message with a second predetermined value of the TTL parameter;
14 means for upgrading the peer router to the new TTL mode of operation;
15 means for destroying an existing session between the routers;
16 means for sending messages with the first predetermined value of the TTL pa-
17 rameter; and
18 means for communicating between the routers using messages with the first pre-
19 determined value of the TTL parameter.

1 16. (CANCELLED)

1 17. (CURRENTLY AMENDED) The computer readable medium of Claim 20~~46~~
2 wherein the program instruction for deciding comprises one or more program instructions
3 for, if the router does not receive a response at all within a predetermined time, deciding
4 that the peer router does not support the new TTL mode of operation.

1 18. (CANCELLED)

1 19. (CURRENTLY AMENDED) The computer readable medium of Claim 20~~46~~
2 wherein the new TTL mode of operation is defined by BGP TTL Security Hack (BTS).
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1 20. (CURRENTLY AMENDED) ~~The computer readable medium of Claim 16 further comprising program instructions for, in response to the router receiving a negative acknowledgement of the initial BGP message from the peer router:~~
2 A computer readable medium containing executable program instructions for allowing a router to efficiently determine a time-to-live (TTL) configuration of a peer router in a computer network, the executable program instructions comprising program instructions for:
3 automatically determining which TTL mode of operation the peer router supports by sending an initial Border Gateway Protocol (BGP) message from the router to the peer router, the initial BGP message including a first predetermined value of a TTL parameter;
4 if the router receives a positive acknowledgement of the initial BGP message from the peer router, determining that the peer router supports exchanges of messages using a new TTL mode of operation; and
5 if the router receives a negative acknowledgement of the initial BGP message from the peer router, deciding that the peer router does not support the new TTL mode of
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16 | operation, and switching to an old TTL mode of operation by resending the initial BGP
17 | message with a second predetermined value of the TTL parameter, and subsequently,
18 | upgrading the peer router to the new TTL mode of operation;
19 | destroying an existing session between the routers;
20 | sending messages with the first predetermined value of the TTL
21 | parameter;
22 | communicating between the routers using messages with the first
23 | predetermined value of the TTL parameter.

1 | 21-25. (CANCELLED)

1 | 26. (CURRENTLY AMENDED) The method of Claim 29 25-wherein deciding further
2 | comprises, if a response is not received within a predetermined time, deciding that the
3 | peer router does not support the new TTL mode of operation.

1 | 27. (CURRENTLY AMENDED) The method of Claim 29 25-wherein the initial message
2 | is a Border Gateway Protocol (BGP) routing protocol message.

1 | 28. (CURRENTLY AMENDED) The method of Claim 29 25-wherein the new TTL
2 | mode of operation is a BGP TTL Security Hack (BTSH).

1 | 29. (CURRENTLY AMENDED) The method of Claim 25 further comprising, in re-
2 | sponse to receiving a negative acknowledgement of the initial message from the peer
3 | router:-A method comprising:

4 sending an initial message to a peer router before a session is established with the
5 peer router, the initial message including a first predetermined value of a time-to-live
6 (TTL) parameter that makes use of the TTL parameter;
7 if a positive acknowledgement of the initial message is received from the peer
8 router, determining that the peer router supports exchanges of messages using a new TTL
9 mode of operation; and
10 if a negative acknowledgement of the initial message is received from the peer
11 router, deciding that the peer router does not support the new TTL mode of operation and
12 switching to an old TTL mode of operation by resending the initial message with a sec-
13 ond predetermined value of the TTL parameter, and subsequently,
14 upgrading the peer router to the new TLL mode of operation.^{1,2}
15 rebooting the peer router, thereby destroying an existing session be-
16 tween the routers.^{1,2}
17 establishing a new session by sending messages with the first predeter-
18 mined value of the TTL parameter.^{1,2} and
19 communicating using messages with the first predetermined value of
20 the TTL parameter.

1 30-33. (CANCELLED)